

THE MARITAL SERIES

A DOCTOR'S MARITAL (SEX) GUIDE FOR PATIENTS (Regular Edition)

A DOCTOR'S MARITAL (SEX) GUIDE FOR PATIENTS (Rhythm Edition)

(Both Editions Also Available in Braille and Spanish)

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Recommended By Dr. _____

For _____

A Note From the Authors

If you had a chance to talk freely with a friendly doctor, and to ask him all kinds of questions about yourself, he might tell you in reply many of the facts that you will find in this book. Perhaps you want to know what makes you the kind of person you are. Since your family and your heredity have a lot to do with this, the book has a chapter about family background and one about heredity. Boys and girls of your age also want to know how a baby begins life and how it is born. You may want to know how boys and girls are different, or how they change and grow up as they pass from childhood into the teens. This book is written to help you understand these things. The authors hope that you and your parents will talk together about any questions you have on the subjects in the book. (A smaller book, that goes with this one, is for your parents.) Understanding what happens to you as you develop in these years can make growing up a happier, more satisfying experience.

M.O.L.
M.A.C.

a doctor talks to 9-to-12-year-olds

By

Marion O. Lerrigo, Ph.D.

in consultation with

Michael A. Cassidy, M.D.

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CHAPTER 1

Your Family's Story



It's a funny thing about your family—you certainly can't get along without them, but at times you can't get along with them, either! Boys and girls of your age, about 9 to 12, sometimes get into this predicament. They love their parents—but parents can be so unreasonable! They call you in from a game to help with the dishes or clean your room, although you think you could just as well do it later. They expect you to wash your hands before you eat, even though you've already washed them twice that day. They send you to bed at 9 o'clock, even though there's a terrific TV program at 10. It's annoying.

But beneath your annoyance, you love your family dearly. You would be truly lost without them, and you are happier when you are getting along well with them.

Let's take a look at your family's story. It gives you some of the background for understanding your parents and yourself.

Once There Was a Wedding

Once upon a time some years ago, your parents were young people. Perhaps they were going to high school or college, perhaps they were working, when they became friends. Possibly they were in the same crowd before they became en-

gaged. Then something happened: they discovered that they loved each other and wanted to marry.

They loved each other very much, but they realized that they would also need all kinds of practical abilities, in addition to being in love, to make their home a happy place to live in. Your father needed to know how to hold a job, and your mother needed to know how to cook and keep the house clean and orderly, and how to stretch the money your father earned to pay all the bills. Maybe she had a job, too, to help out.

When they thought they were ready to make their own home, they were married. Probably you have seen their wedding pictures, and they have told you about the happy excitement of the wedding day. After they were married, they kept on discovering new things that they needed to know. For example, each one found ways of helping the other to be happy, and ways of comforting the other when things went wrong. A sense of humor was useful, too, so that they could laugh at their mistakes.

But where did your parents learn all these things? Of course they learned a great deal from their own experience. They also learned much from the previous generations, especially from their parents, who are your grandparents.

Gifts to You from Older Generations

Your parents' parents and grandparents, and so on, back for generations, each passed on to their children an amazing amount of useful knowledge and customs. For example, your parents learned their first words in the language spoken in

their home. If your grandparents spoke English, your parents' first baby words were in English, but if your grandparents spoke French, German, or some other language, your parents first learned to speak in that language.

Your grandparents also taught your father and mother about right and wrong, about good manners and true courtesy, how to be hospitable to visitors, how boys and girls should act toward each other, and how to get along with friends. They taught them how to do useful chores around the home, and if the children earned some money, the parents taught them how to spend or save it. And your grandparents showed your parents how to celebrate holidays so that they were days to enjoy and remember.

Some of the things which your grandparents taught your parents sound familiar to you, for *your* parents are teaching *you* about the same sort of things, although in a modern way. Your parents are teaching you how to know right from wrong, how to have good manners, how to make and keep real friends, how to play, dress and eat in order to keep well, how to speak correctly, how to celebrate holidays, and so on.

In fact, parents have been handing down their knowledge, beliefs and customs to their children for an endless number of generations. There is a tremendous amount of experience behind the rules they teach. When parents insist that their children obey rules of good behavior, they aren't just trying stubbornly to have their own way. They are using the experience of their own lives and the wisdom that has been passed on to them by earlier generations. They are trying to help you learn how to act so that you will enjoy a good life and can help others enjoy a good life too.



Of course, parents aren't the only people who teach children and form their characters. Your minister, priest or rabbi guides you in discovering what is right and wrong. The teachers in your Church School help you to become familiar with the teachings of the Bible or other religious writings. Your school teachers not only teach you school subjects, but help you to understand ethical principles. The laws of the country are intended to guide people in doing the just and right thing. The libraries have a great many books of moral and spiritual value about which great men have written. Then, too, many of the great pictures in museums express spiritual ideas as does much of the great music of the world.

Your Social Heritage

In one sense, all these things which are passed on to you by parents, schools, churches, books, museums, and artists are an inheritance. They are gifts to you from the past which you did not have to create. People, who lived before you, discovered or created them, and gave them to you. These treasures of mind and spirit that have come down to you from your ancestors are often called a social heritage.

The things that are passed on to the younger generation as a social heritage are not things that children are born knowing how to do or understand. As they grow up, babies, children and young people have to learn how to use the knowledge and follow the principles of right and wrong or the customs and manners that are part of their social heritage. It isn't always easy.

In a sense, you have to earn your social heritage because you have to learn to make use of it. You get the benefit of it only through what you are willing to learn from it.

You inherit some other things in a different way. Eye color, skin color, color of hair, many other physical traits, and some traits of mind and temperament are part of your biological heritage. They are already yours when you are born. There is more about this kind of heritage in the next chapter.

Part of the social heritage of our western civilization is concerned with our beliefs about ideal family life. These beliefs have been built up through centuries of experience of family life in western civilizations. To put it simply, in our civilization, we believe that the happiest, steadiest families

are those in which husband and wife love each other and their children devotedly, while the children love and honor their parents. All members of the family do their best to help the others as they love, grow, play and work together. Not all families are like this today, nor were they in the past, but there are many families in which every member tries to do his part in creating a happy family life. It is an ideal to work for.

Many of the principles of behavior which your parents teach you are important because they help you to be the kind of person who will be able to do his part to create a happy family life.

Your parents want you to take advantage of the best of the ideas, beliefs and customs that are part of your social heritage. They know that you also need new ideas and customs suited to the changing world today. They want you to use the best of both the old and the new, so that you can become the best person it is possible for you to be. Because they want the best for you, they try to teach you the best principles of good behavior.



CHAPTER 2

Your Biological Heritage



You've noticed that when there's a new baby, friends who see him are likely to say, "He's just the image of his father," or "He's got his mother's ears and nose all right," or something like that. Perhaps family friends who haven't seen you recently make similar remarks to you: "You're getting to look exactly like your mother," or "I'd know you anywhere for your father's child." Or they may say, "For the life of me, I can't see that you're like either your mother or your dad." But it is always true that both parents, and ancestors on both sides of the family contribute to a child's biological heredity. They determine many of his bodily traits, and perhaps his ability to benefit mentally from his education.

Life Gives Life

There is a commonplace, yet wonderful fact, which is so familiar you may not have thought about it. A new life comes from a living being, and the new life resembles the life from which it came. A rose plant produces a rose, not a cabbage. A bird's egg hatches into a bird, not a fish. And a human being has a human baby, not a puppy or a kitten. Even children who don't look much like their parents resemble them because they are human beings. Usually there is much more

similarity than that, if only what is called "a family resemblance."

Each baby resembles its parents in some respects, but no baby is ever exactly the same as either parent. It seems that children inherit traits that are different from, as well as like, those of their parents. In fact, every baby is different in some ways from every other human being. (We'll talk later about one exception.) When you think how many hundreds of millions of people there are and have been, this is truly wonderful. But there are scientific reasons which scientists of this century have begun to understand.

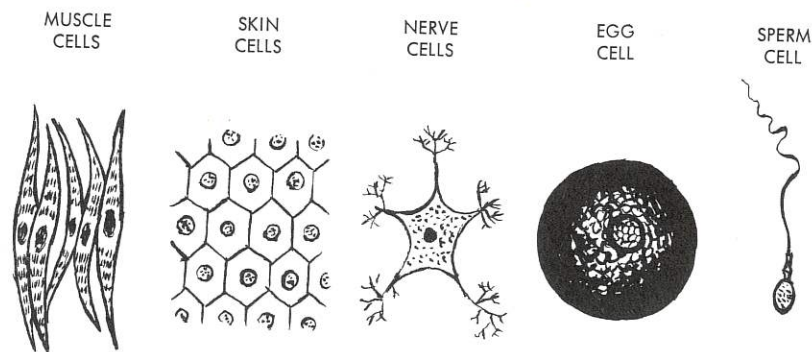
Something about Cells

To understand how life is passed on from parents to children, and why children are both like and unlike their parents, it is necessary to know something about cells. All living things are made of cells. Some creatures, like the tiny amebas which live in water, are made of only one cell. But there are about ten trillion cells in the body of a human being.

Cells are so small that you can see them only under a microscope, yet they have several parts. Usually a cell has a thin cell wall which encloses some material called cytoplasm. In some cells the cytoplasm looks like uncooked white of egg. Surrounded by the cytoplasm, there is a nucleus, also enclosed in a membrane. In the cytoplasm there are chemicals called enzymes. They do many different jobs in keeping the cell alive and working.

An ameba makes a new ameba in a comparatively simple way. The cell grows larger, and its nucleus and other parts

divide to make two of each. Then the ameba divides to make two separate cells. The result is two complete new amebas. That is the way amebas reproduce themselves. It is called "asexual reproduction" (or reproduction without sex) because it does not take two different sexes to produce a new creature. Many single-celled creatures reproduce in this way.

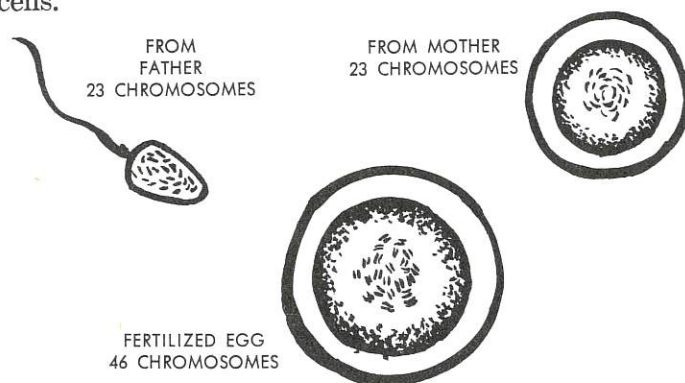


A human being not only has trillions of cells, but the cells are of different kinds. Different kinds of cells make up the skin, bones, blood, nerves and muscles. And there are also reproductive cells, which are different in males and females. In males, the reproductive cells are called sperm cells. In females, they are egg cells. A new human life begins only when a sperm cell from the father unites with an egg cell from the mother, and the two cells form one fertilized egg cell.

The Baby's Heredity

But whether it is an ameba, or a human being, the new generation that is created resembles the life from which it

came. The ameba will produce an ameba, and the human fertilized egg cell will grow into a human baby who in some ways will be like, and in some ways unlike his parents. Part of the answer to how this happens has been found by a study of cells.



The nucleus of the cell proves to be not at all a simple thing. Inside it, there are small, threadlike objects of different shapes called chromosomes. The chromosomes come in pairs. In most human cells, there are 23 pairs, making 46 chromosomes. The exceptions are mature egg cells and mature sperm cells which have only 23, instead of 23 pairs of chromosomes. (The number differs in different animals and plants. A fruit fly, for example, has only four pairs, or eight chromosomes.)

The chromosomes are made up of thousands of still smaller substances called genes. The genes carry the traits which a child inherits. Scientists have recently found out that there is a chemical called DNA in the genes which seems to determine how a hereditary trait is passed on. It appears to be in

somewhat the same way as when men make a mold to reproduce the shape they want. It's as if DNA makes a mold, and the new cell that is created takes the shape laid down by DNA. (If you want to know the full name for DNA, here it is: desoxyribonucleic acid.)

When the human egg cell and the sperm cell unite to form a fertilized egg cell, 23 chromosomes come from the mother's egg cell, and 23 chromosomes come from the father's sperm cell. They merge into one nucleus with 23 *pairs* of chromosomes in the new fertilized egg cell. The baby's development will be determined by these chromosomes and their genes. His heredity will be affected by both sides of the family, since his genes came from both his parents.

But more than that comes into the story. When the father was born, his chromosomes and genes came from *both* sides of *his* family. When the mother was born, her genes came from both of *her* parents. Mother and father therefore passed on to their child chromosomes and genes from all 4 of *their* parents. And so on back for generations. So each child has a combination of genes and inherited traits that come from both his parents and through them from many different ancestors on both sides of the family.

Inheritance of traits is still more complicated because some qualities are stronger than others and are more likely to succeed in getting passed on to the new baby. Each member of a pair of chromosomes has genes for determining the same traits. For example, both members of one pair of chromosomes have genes for determining eye color. If the genes in one chromosome call for brown eyes, but those in its partner

chromosome call for blue eyes, the child's eyes are likely to be brown, since the genes for brown eye color are stronger. The stronger genes are called dominant; the weaker genes are recessive. So a baby may have brown eyes, but may have genes for both blue and brown eye color. If, when he grows up, he marries someone with blue eyes, there's a chance that some of their children will have blue eyes. It's equally complicated for many other inherited traits.

The genes in the chromosomes determine the baby's eye color, and the color of his skin and hair. They have a great deal to do with the shape and form of his facial features, his eyes, ears, nose, mouth and teeth. They help decide whether he will be tall or short, or of heavy, light or medium build. They affect his health, determining in part whether he can resist certain diseases or whether he is likely to be overcome by them. They help determine the degree of intelligence, and possibly some traits of personality.

One of the traits which the child gets from his father is his sex, for the sperm cell carries the answer to the question, "Will it be a boy or a girl?" There are two kinds of sperms, X sperms and Y sperms. If an X sperm unites with the egg cell, the baby will be a girl, but if a Y sperm fertilizes the egg cell, the baby will be a boy. There are about 106 boys born for every 100 girls, so there are probably more Y sperms than X sperms.

As we said earlier, there is one exception to the statement that no baby is exactly like any other baby. Occasionally, when a fertilized egg cell starts to grow, it grows into two babies instead of one. These babies are called identical twins.

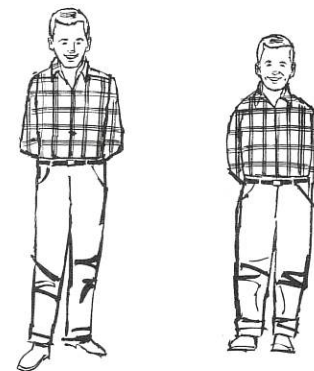
They look exactly like each other because they started from the same fertilized egg cell and have the same set of chromosomes and genes. They are always of the same sex.

*Identical
Twins*



Other twins do not start from the same egg cell, but from different egg cells that happened to be fertilized at the same time by different sperm cells. They have different sets of chromosomes and genes, and may not look any more alike than other brothers or sisters. They are called fraternal twins. They are not necessarily of the same sex.

*Fraternal
Twins*



Perhaps you begin to understand now why children resemble their parents as a rule, but why they can also be unlike them in some traits. Their genes come from their parents, and through their parents they also have genes from many different ancestors. But there are thousands of possible combinations of the genes of any pair of parents. Some of the genes are strong and dominant, others weak and recessive. These facts help to explain why brothers and sisters may be like each other, or quite different. A child may look more like a grandparent, aunt or uncle than like his parents. The great variety of genes and combinations of genes means that there are great variations even within a family. This makes the human race wonderfully varied and interesting.

Now that you have read about social heredity and biological heredity, you might like to make one list of things that are part of your social heredity, and another list of things that are part of your biological heredity. In which list do you think the following things belong?

Customs in the places where your parents and grandparents were born and lived? The language they spoke when they were children?

The color of your eyes and hair? The shape of your nose?

Birthday customs that your parents observed when they were children? Those you observe today? Holiday customs observed now in your family?

Your tendency to be tall or short?

CHAPTER 3

The First Day of Your Life

Your life began one day when an egg cell and a sperm cell united to make a fertilized egg cell. You'll want to know how this can happen.

The Egg Cell's Journey from the Ovary

Let's begin with the egg cells. When your mother was born, like all baby girls she had 2 body parts called ovaries. They are in the abdomen of girls and women. The name "ovary" comes from the Latin language, in which the word "ova" means eggs. In human beings, and in many other living creatures, egg cells are made and stored in the ovaries. The ovaries are about the size and shape of an unshelled almond in girls and women.

When a baby girl is born, there are already many partly grown egg cells in the ovaries. By the time she has grown to be a girl of 12 or 13 years of age, changes have taken place in her body which cause the partly grown egg cells to ripen or mature. As a usual thing, one cell ripens each month, first from one ovary, and then from the other. Occasionally, more than one ripens at a time.

You may wonder what the egg cell is like. Even though it is no bigger than the point of a needle, it is yellowish because it has egg yolk in it. It is spherical in shape. Like other cells, it has a nucleus which contains chromosomes and genes.

When an egg cell is maturing, it is surrounded by a small sac, known as a follicle, and the follicle holding the egg goes to the surface of the ovary. When the egg cell is ripe, the follicle opens to discharge the ripened egg cell from the ovary. This is called ovulation. After ovulation has started in a young girl, it usually takes place once a month until she has become a woman about 40 to 50 years of age, when it stops.

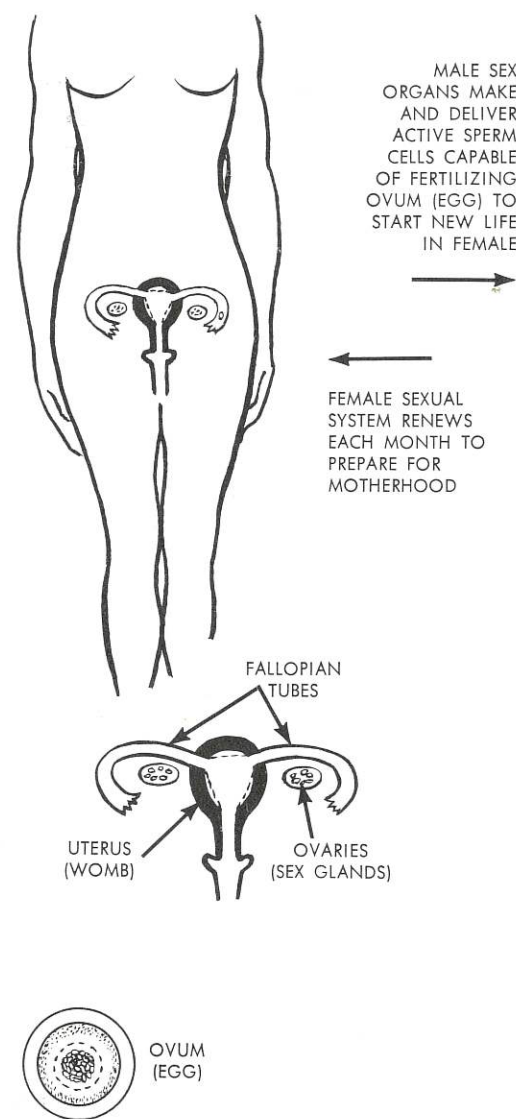
At ovulation, the egg cell is discharged from its follicle near the open end of a tube called the Fallopian tube. There is a tube for each ovary. The opening that runs through these tubes is very small, and each tube is about 4 inches long. The tiny round egg finds its way into the tube and is moved gently along the length of the tube until it reaches the uterus, or womb, at the tube's other end.

The uterus lies in the abdomen of girls and women. It is hollow, something like a pear in size and shape. It is the place where a fertilized egg cell can grow into a baby. When this is happening, the uterus can stretch to hold the baby until he is big enough to be born.

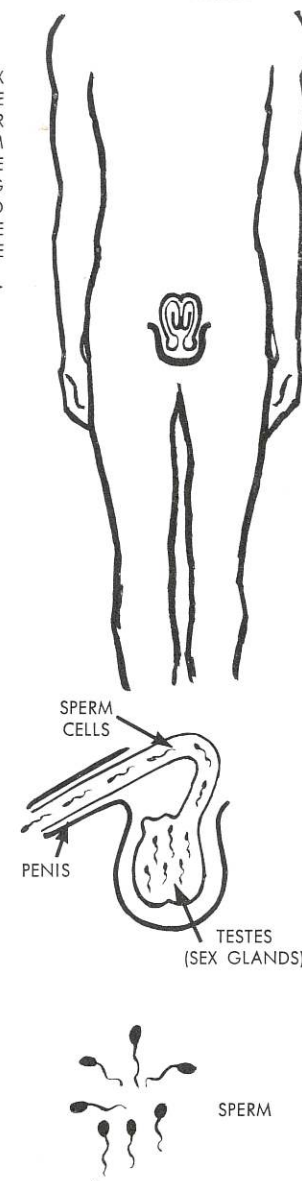
The uterus is connected with the outside of the body by a narrow passage called the vagina. The outside opening of the vagina is between the thighs, where it is protected by folds of skin and flesh called the vulva. The outside opening of the vagina is between the opening for urine, which is in front of it, and the opening for bowel movements, which is behind it.

The ovaries, tubes, uterus and vagina are female sex organs. They are also called organs of reproduction, because they take part in reproducing, or making a new life. All girls and women have these organs. Boys and men do not have them.

THE FEMALE



THE MALE



The Sperm Cell's Journey

The small sperm cell is shaped something like a tadpole, with a big head and a wiggly tail. The nucleus is at the bigger end. The egg cell, which can barely be seen with the naked eye, is thousands of times bigger than a sperm cell, which can only be seen with a microscope. Sperm cells move very fast for their size, because their tails lash back and forth.

Sperm cells are made by the millions in two testicles, or testes, which are parts of the body of a boy or a man. Each testicle is about the size of an olive or small plum. They are in a sac of skin called scrotum, which hangs between the legs of boys and men.

On leaving the testicles, the sperm cells enter the penis, a part of the body which is shaped something like a thumb, and hangs in front of the testicles. It is usually soft and limp, but it can become firm and erect even in a baby boy. This is called an erection. The testicles, scrotum and penis are male sex organs, or organs of reproduction. All boys and men have them, but girls and women do not.

A baby boy already has his testicles, scrotum and penis when he is born. At birth, the end of the penis is partly covered by loose skin. The doctor sometimes cuts it away in a little operation called circumcision. Otherwise, the boy should turn the loose skin back when he bathes, to keep the body parts clean.

Although a baby boy already has all his male sex organs when he is born, he does not as a rule make fully mature sperm cells until he is about 13 or 14 years old. From then on

into manhood, when a boy or man is sexually excited, his penis will become firm and erect. A whitish fluid pours out of certain glands and mixes with the sperm cells, making a mixture called semen, and the semen spurts out of the penis. This is called an ejaculation, and it is accompanied by an exciting sensation. The semen leaves the penis through the urethra. It is the opening through which urine leaves the body, but urine and semen do not pass through the urethra at the same time. It is when the penis is erect and semen is ejaculated that the sperm can begin their journey to find an egg cell.

How the Parents' Love Creates a New Life

It is the act of mating, or sexual intercourse, which brings sperm cells and egg cells together. Since a father and mother love each other very much, they want at times to be alone together, and to show their love in caresses and in sexual intercourse. They also want to have children. When they lie close together, embracing each other, the father's penis becomes firm and erect and can fit into the mother's vagina, which is soft and stretches easily. This embrace gives pleasure to both of them. Then if semen leaves the father's penis, the sperms can travel along the vagina, enter the uterus, and go on into the Fallopian tubes.

If there happens to be an egg cell in one of the tubes, one of the sperm cells may find and enter it. Then a fertilized egg cell is formed. This is a most wonderful event, because it means that a new life has begun. If all goes well, the fertilized egg cell will grow into a new human being. But most egg cells are not fertilized, and die before long.

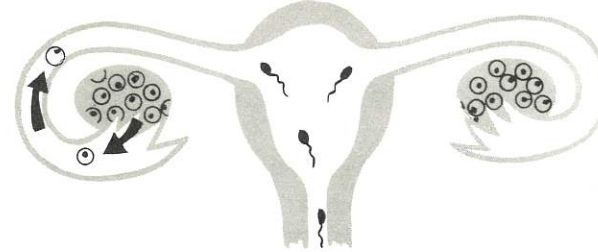
Scientists think that it takes about an hour or so for the sperm cells to travel through the vagina and uterus, and along the Fallopian tubes, where they have a chance of meeting an egg cell. This speedy progress is important, because neither egg cells nor sperm cells live more than a day or so, except for the sperm and the egg which unite. So the speed of the sperm in reaching an egg cell while both sperm and egg are lively and fresh helps to make sure that babies are born and the human race goes on.

The fact that sperm cells are produced by the millions also increases the chances that one of them will reach an egg cell during the day or so each month when there is an egg cell in the Fallopian tubes. From 20 million to 500 million sperm cells are thought to leave the testicles at one time. However, only a few succeed in reaching the Fallopian tubes while an egg cell is there. Scientists think that more than one sperm sometimes may pierce the outer wall of the egg cell, but that only the first sperm to reach the nucleus can unite with it to make a fertilized egg cell.

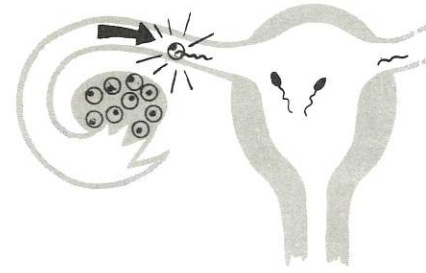
The sperm cell makes an enzyme (a special kind of chemical) which helps it to pierce the outer membrane of the egg cell which is rather tough. After entering the egg cell, the sperm then has to find its way to the nucleus of the egg. Considering that the egg cell is thousands of times larger than the sperm, the little sperm still has a comparatively long way to go.

When the sperm arrives at the egg's nucleus, the sperm's nucleus and the egg's nucleus remain side by side, and their contents are combined. The 23 chromosomes of the egg's nucleus pair off with the 23 chromosomes of the sperm's nu-

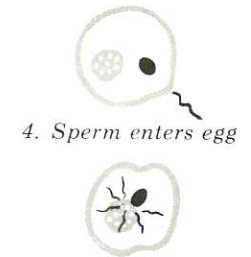
the process of fertilization



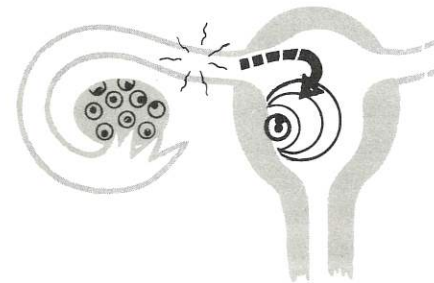
1. Egg cell leaves ovary 2. Sperm cells enter uterus



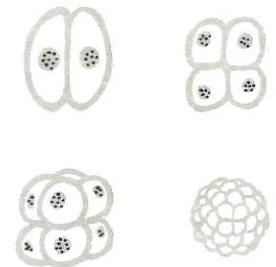
3. Egg cell and sperm unite in tube



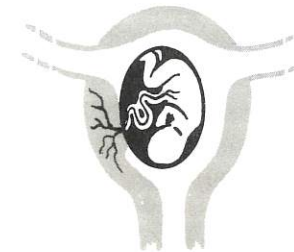
4. Sperm enters egg



6. Fertilized egg enters uterus, attaches to wall



7. Cell begins to divide and grow into baby



8. Baby grows, fed by placenta

cleus, to make 23 *pairs* of chromosomes, with their thousands of genes. The heredity of the father, carried through the sperm's nucleus with its chromosomes and genes, and the mother's heredity carried in the egg's nucleus, thus combine. It is a new combination for a new human life. It will produce a baby that combines the heredity of his mother's family and his father's family. He may be more like his father in some respects, more like his mother in others, or in many ways quite different from either of them.

The Day Your Life Began

When the egg and the sperm cell have combined to make the fertilized egg cell, the new cell does not waste time in beginning its work of growing into a baby. Its first step is to divide the one fertilized cell into two cells. That marks the first day in the life of a new human being.

That is what happened on your first day of life, 9 months before you were born. How you grew through the nine months before your birth, how you were born, and how you have grown since birth will be told in the following chapters.

CHAPTER 4

Your First 9 Months

The events of the first 9 months of the life of a baby make one of the most wonderful stories that can be told. These things happen to every baby who is born, and so these interesting events have happened to you, too. This part of your story covers about 266 days, a few days more or less, or just about 9 months, during which you grew in your mother's uterus, or womb.

The First Weeks

For about the first 7 weeks of the baby's life, he is called an embryo. Ten hours after the fertilized egg cell has divided to make 2 cells, these cells have divided again, and there are 4 cells. These cells divide again and again, and in 4 days a cluster of about 36 cells has formed. By about this time, the cell cluster has moved from the Fallopian tube into the uterus, and by the end of the first week it settles down in the lining of the uterus. The lining has become somewhat thickened and spongy. Its blood vessels have enlarged in order to supply extra blood for nourishing the new life. Here the little embryo will live and grow until it is born.

By the time the embryo nests in the uterus, its cells have already begun to be different from each other and to be arranged in layers. One layer of cells will produce the baby's

brain, spinal cord, nerves and skin. A second layer will produce his digestive system, liver and pancreas. A third layer will make the skeleton, heart, blood vessels and muscles.

It is the chromosomes and genes in the cells, beginning with the fertilized egg cell, which seem to give the instructions to the new cells so that they become different from each other and form all the body parts of a human being. Since the chromosomes and genes of the fertilized egg cell came from a human father and mother, the little embryo always grows like a human being.

Sometimes you hear it said that the embryo passes through a stage of evolution when it is like a fish, but this is not true. Its cells are always human cells, with the right number of genes and chromosomes for human beings. It is always a human life, even though in the beginning it does not look much like a human, and at one stage its shape may remind you of a fish.

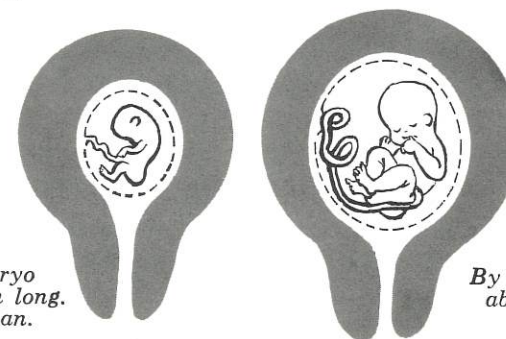
Very soon after the cell cluster has first formed, it is enclosed in a sac of silvery membrane that looks like a shiny bubble. The sac is called the amnion. It is water-tight, and holds some fluids in which the embryo floats. The sac of fluid protects the delicate cells from injury. It grows along with the growing embryo and is always big enough to hold the unborn baby. This is one of many ways in which nature protects the unborn baby's life.

By the end of the first month, there is a whole little embryo. It is only about $\frac{1}{4}$ inch long, but even so, it is about 10,000 times larger than the fertilized egg cell was. This rate of growth is very much faster than it ever will be after the baby is born.

The month-old embryo is very delicate, and is jelly-like. However, it has a head, and the beginnings of eyes, ears, mouth and brain. There are already a blood stream and a heart that is beating. The tiny creature also has the beginnings of a digestive tract. In the 3rd week, little buds that are the beginnings of arms will appear, and a couple of days later, buds can be seen from which legs and feet will grow. Yet we have to admit that the small embryo does not look much like a baby.

Toward the end of the 2nd month, the embryo is about an inch long, but he has all the internal organs of the body, and his face has eyes, ears, nose, lips and tongue that are human-looking. He even has the buds of milk teeth in his jaws. Of course, everything is still very tiny. His arms are about the length of an exclamation point.

Scientists who have studied the way embryos grow have made a time-table of development for the first 48 days. They can tell by an embryo's stage of development just about how many days old it is. For example, on day 30, the arm buds are two little, rounded knobs, one on each side of the body, but by day 35, the hand section begins to show outlines of the fingers.



*2 month embryo
is about an inch long.
Form is human.*

*By 4th month fetus weighs
about 4 ounces and is in
"bag of waters."*

The Next Stage: From Embryo to Fetus

In the 6th week, the embryo has a complete skeleton, but it is made of cartilage, not hard bone. You know what cartilage is like because your ears and the tip of your nose have cartilage in them. It is tough, but softer than bone. Between the 46th and the 48th day, the first true bone cells replace cartilage. This always happens first in the embryo's upper arms. From then on, bone cells will keep on replacing cartilage until the individual is about 20 years old, when bone growth is finally completed.

From the time when the first true bone cells are formed, the developing baby is called a fetus, instead of embryo. Fetus comes from Latin; it means young one, or offspring.

Some of the baby's inherited traits begin to show up very early. By the 7th week, the embryo shows some family traits in the shape of its hands and feet, and in the shape of its ears. Some embryos have larger or more prominent ear lobes than others, according to the family heredity.

In the 3rd month, the little fetus begins to be quite active. He can kick, turn his feet, make a fist, move his thumb and bend his wrist. He can also turn his head, squint, frown, and open his mouth. He can't suck yet, but he can and does swallow some of the fluid which surrounds him in the sac.

He can also breathe in and out. In doing this, he breathes in some of the fluid from the sac of waters, and then breathes it out. He does not drown when he inhales the water, because he does not yet depend on oxygen from the air to keep alive.

Scientists have studied the behavior of the fetus by mak-

ing thousands of feet of motion pictures of fetuses which have been born as early as the 6th week. They have learned that the behavior of the fetus develops, just as his body develops. For example, when the embryo is 6 or 7 weeks old, it does not move of its own accord, although its body moves automatically if its upper lip is stroked lightly with a hair. But at the beginning of the 3rd month, the fetus moves of its own accord, without being touched. Connections between nerves and muscles have grown to the point where the fetus can make more movements. In the 9th and 10th weeks, he gains full use of his arms and can bend his elbow and wrist. In his 12th week, he can move his thumb in opposition to his fingers.

By the end of the 12th week, the baby's facial expression already shows a family likeness, since the arrangement of facial muscles is inherited. His face becomes prettier, too, for his eyes, that were too far apart for good looks, move closer together, and his ears move to eye level, the position we are used to seeing. The vocal cords are made now, but the baby doesn't make sounds because there is no air in his surroundings.

Girls and boys begin to look different now. For one thing, the sex organs are forming out of certain folds of tissue, during the 2nd and 3rd months. In baby girls, there are already some primitive egg cells, and in baby boys some primitive sperm cells.

In the 3rd month, the baby's growth prepares him for sucking and eating after birth. His lips are formed, the sucking muscles of his cheeks fill out, and the glands that make saliva appear. The 2 halves of the roof of his mouth, the hard

palate, grow together. In a few babies, these 2 halves do not come together perfectly, and the baby is born with a cleft palate. Doctors can do a great deal nowadays to remedy this birth defect, as well as some others. When you think of all the complex ways in which the baby grows before he is born, it is wonderful that the great majority are born perfect.

How the Unborn Baby Is Fed and Given Oxygen

Before the baby is born, he cannot eat by mouth or breathe through nose and lungs. And he must get rid of body wastes some other way than through urination and bowel movements. So before his birth, he gets his food and oxygen from his mother's blood supply, and her blood carries away his body wastes.

The baby is attached to the lining of his mother's uterus by a long cylinder of tissue which is called the umbilical cord. It extends from the place where the baby's navel, or belly button, will be, and is attached to the mother's uterus at the other end. Where the cord is attached to the uterus, there is a special network of blood vessels called the placenta. The placenta is something like a flat, round spongy cake growing on the lining of the uterus.

The umbilical cord contains 2 arteries which carry used blood away from the baby's body, and divide into hundreds of tiny little branches in the placenta. The little branches then come together again and return the blood to the baby's body through one big vein that also runs through the cord. The arteries, branches and vein make a big loop through which the baby's blood travels. In the placenta, the mother's

blood also flows through a great many small blood vessels which make a network with the baby's vessels. But the mother's blood stream never flows directly into the closed loop of the baby's blood stream.

The placenta with its network of blood vessels is a very remarkable part of the mother's body. It can act on the food material and the oxygen in the mother's blood so that they can filter through the walls of her blood vessels and into the baby's little blood vessels that are mingled with hers in the placenta. Her blood vessels can receive the waste materials that filter through from the baby's blood stream. The walls of the little blood vessels act as if they were porous, so that the waste materials in the baby's blood stream are exchanged for the fresh food and oxygen he needs.

Although mother and baby have separate blood supplies, what the mother eats and her state of health are important for the baby, since he depends entirely for his nourishment on what she can supply.

The Last Months Before Birth

In the baby's 5th month, he becomes much more active, and even turns somersaults in the fluid which surrounds him. Sometimes the mother can feel his movements, and can recognize different parts of his body, such as a hand, or foot or his head. If he hiccups, she can feel him. The baby now sleeps and wakes and even has a favorite position for sleeping. He grows to be about a foot long and to weigh about one pound.

In his 6th month, he adds a couple of inches in length, and reaches about 1¼ pounds in weight. He gains strength, too,

and has a stronger grip. His eyelids have been closed since about his 9th week, but now they open, and he can look up or down or sideways.

If a baby is born prematurely in the 6th month, there is a slight chance that he may live because he can maintain regular breathing. The youngest babies born prematurely, and known to have lived, were between 23 and 25 weeks old and weighed one pound. Of course they had to be cared for in an incubator. As a rule, however, a baby born so young does not live. A premature baby born after 7 or 8 months has a better chance to live.

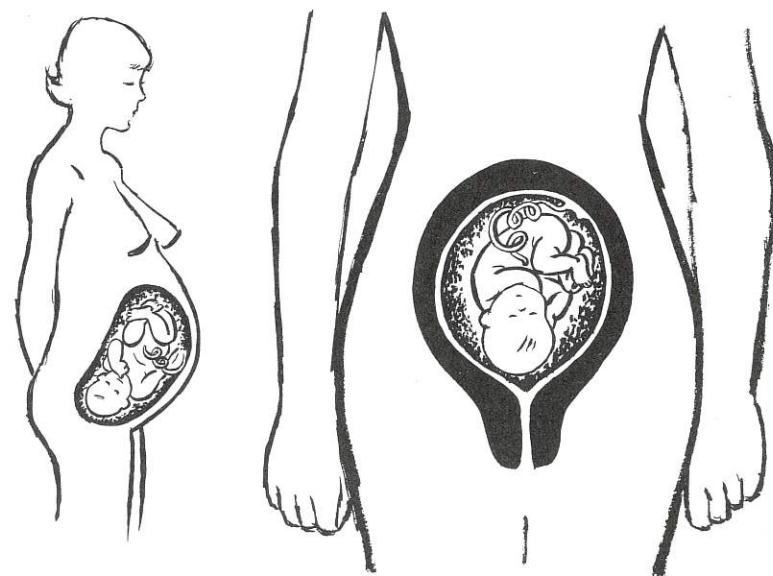
In the 7th, 8th and 9th months, the baby gains a large part of his weight. In the entire first 6 months, he has reached a weight of only about $1\frac{1}{4}$ pounds, but in his 7th month he gains a little more than another pound. During the 8th and 9th months, he is likely to gain about 4 pounds. Babies who gain at this rate weigh between 6 and 7 pounds when they are born. Some babies weigh a little more, some a little less.

The baby adds to his good looks in these months, because hair grows on his head. And he develops a very necessary skill—he begins to practice sucking. He may even suck his thumb. Of course, a baby couldn't live normally if he couldn't suck, for that is the way he gets his food in his first months of life.

The baby now fits so closely in his mother's uterus that he is less active. No more somersaults for a while! He can just turn from side to side. He usually settles into a head-down position, partly because his head is the heaviest part of his body, and partly because the shape of the uterus now makes the head-down position most convenient.

In the 9th month, space is still more cramped, and when the baby moves an arm or a leg, the moving bulges can be seen on his mother's body.

By the end of the 9th month, the baby has a nice padding of fat under his skin to keep him warm. His nerves and muscles are working well together. He can suck and swallow, and digest his food. He can see and hear and feel. His lungs are ready for breathing. In other words, he is ready to live in the outside world. And high time, too, because he has grown so big that by now his mother's uterus wouldn't stretch easily to accommodate a bigger baby. So now it is time for him to be born.



*From 6 months on baby's presence is noticeable.
Mother can feel movement.*

CHAPTER 5

The New Baby Arrives

We have just read about the 9 months in which the baby grows in his mother's womb, and how her body meets his needs in a remarkable way. The story is equally wonderful when it is time for the baby's birth.

The Baby's Birth

About a week before it is time for him to be born, the baby's growth slows down. The mother knows that birth is starting when she feels the muscle contractions beginning. Eventually they will push the baby out of the uterus into the vagina, and then outside the mother's body. When these muscle contractions start, the mother is said to be "in labor." Then she knows she should start for the hospital, though there is usually plenty of time to get there. Her body must do a lot of work before the baby will be born.

First, the opening from the uterus into the vagina must become larger. This opening is called the cervix. When the muscle contractions have opened the cervix wide enough, the baby's head slips through into the vagina, which also stretches wider. The contractions keep on growing stronger and coming closer together, and finally they force the baby's entire body through the vagina and out of the mother's body.

The time it takes for a baby to be born varies from about

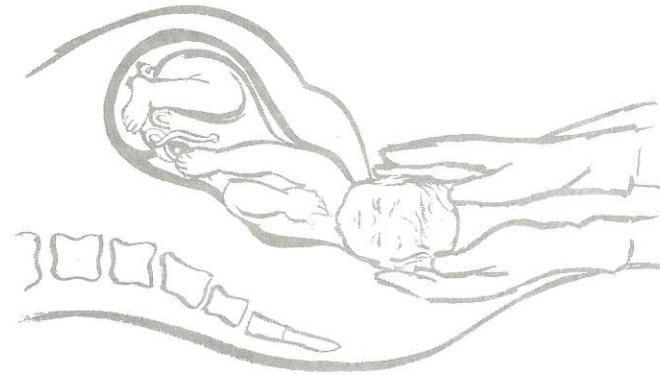
an hour to many hours. The average length of labor for a mother's first baby is 14 hours, but only 8 hours for later babies.

Birth is difficult work, both for the mother and for the baby, but the mother is so happy to have her child that she soon forgets the labor pains in the joy of having the new baby.

Not long after the baby is born, the placenta comes out too. It is often called the afterbirth. The doctor cuts the umbilical cord and bandages the cut place on the baby's abdomen. The stub of the cord will drop off soon, leaving the baby's navel, or belly button, where the cord was attached. The cut cord does not bleed because some jelly-like material in it swells on exposure to air and pinches the blood vessels shut. Neither mother nor baby feels the cut because there are no nerves in the cord.

Some time during the birth, the sac of waters has broken, and when the baby is born, he is likely to be wet, but clean.

You may wonder how the head and body of even a small



With assist from doctor breathing baby is born.

baby can pass through the cervix and vagina. Of course these openings stretch. But another kind of help comes from the baby. It is an example of the marvelous timing in his growth that makes him ready to do the right thing at the right time. When he is ready to be born, the baby's skull is not yet hard and rigid. There are five large, bony plates that make up the skull, but they have not grown together and there is space between them before birth. When the baby is forced through the cervix and the vagina, these bones are squeezed closer together so that they may even overlap. This gives the baby's head a long, narrow shape, but does not injure the brain. A short time after birth, the baby's head takes its normal round shape once more. The spaces between the bones are called "fontanel" and the pulsing of the baby's blood stream can be felt if you touch them lightly. The "soft spot" on top of a young baby's head is one of the fontanel. Later, the bones become harder and grow close together.

You may have heard that the doctor or nurse slaps the newborn baby to make him breathe as soon as he is born. The truth is that the nurse or doctor may hold him upside down to help empty the fluid and mucus from his nose and throat and make his first breaths easier. It may take 2 or 3 days for his breathing to become quite easy and regular. You know that the lungs are made up of thousands of tiny air sacs. When the baby is born, these have to be expanded, and some fluid and mucus expelled from them. So it is difficult for him to take his first breaths, just as it may have been difficult for you to blow up a balloon when you were small.

At the same time that the baby is taking his first breaths, his own heart must begin to pump blood to his lungs. Now he

must get oxygen into his blood from his own lungs instead of through his mother's placenta.

All in all, both the baby and his mother work hard while he is being born. Many mothers and fathers choose to have their baby in a hospital because doctors and nurses are there to take care of mother and baby, and all the equipment they need is at hand. Today the great majority of babies in modern countries are born safely and live to be healthy children. This is a tremendous improvement over conditions at the beginning of the twentieth century.

How Does a Mother Know a Baby Is Coming?

If you do not already know, you may wonder what sign first makes a mother think she is going to have a baby.

After the egg cell has been fertilized, the father and mother do not know for several weeks that a baby is growing in the mother's body, for the little embryo is so small that the mother cannot feel it. Then when does she begin to think she is pregnant? (A woman is pregnant when a baby is growing in her uterus.) One of the answers to this question is connected with the story of menstruation.

The Story of Menstruation

In Chapter 3, you read that an egg cell ripens and leaves one of the ovaries each month after a girl reaches the age of 12 or 13 years. To prepare for this event, the mucous membrane which lines the uterus undergoes certain changes each month in order to make it possible for a fertilized egg to become implanted there.

The changes in the membrane lining the uterus are brought about by certain glands. In the skull, there is a small gland about the size of a pea, called the pituitary gland, which produces certain chemical substances called hormones. These hormones stimulate the ovaries, which in turn produce other hormones which cause the membrane lining the uterus to become thicker and its blood vessels to become larger and more numerous. If an egg cell has been produced by one of the ovaries, but has *not* been fertilized by a sperm, the egg dies and the mucous membrane breaks down and leaves the body through the cervix and vagina, along with some sticky mucus and blood. This process is called menstruation. It usually lasts several days. It takes place about every 28 to 32 days, roughly about once a month. (The word menstruation comes from the Latin word meaning month.) However, when a girl first begins to menstruate, the menstrual periods are sometimes irregular, and egg cells are not always produced until she reaches full maturity.

If the egg cell *has* been fertilized by a sperm, menstruation does not take place, and the embryo grows in the membrane lining the uterus which was specially prepared for it by the hormones from the ovaries. From then on, as long as the baby is growing in the uterus, there is no monthly flow of blood, for it is needed for the baby's growth.

If a mature woman misses a menstrual period, she begins to think that an egg cell may have been fertilized and that a baby may be growing in her uterus. Probably she goes to the doctor before long to make sure, and to have him take care of her while she is pregnant.

Waiting for the Baby's Arrival

Most boys and girls of your age will be pleased and excited to know that they are going to have a new baby brother or sister. If your mother is expecting a baby, she is likely to tell you about it at least by the time you can see that her body is growing larger. A mother usually looks bigger by the time the baby has been growing in her uterus for 4 or 5 months, for the uterus has been stretching and growing larger as the baby grows. The time comes when the mother's ordinary clothes no longer fit her. Then she may like to wear some of the pretty fashions which are made today especially for pregnant mothers. They are called maternity clothes.

You can help your mother in many ways while your family all are waiting for the baby to arrive. You can run errands for her if she is a little tired. If the doctor thinks she should rest every day, you should be careful not to disturb her quiet time.

Having a baby is a normal, healthy thing, but with all the changes that occur in her body, it is not surprising if a pregnant mother has some discomforts. She may get unusually sleepy, or have some backache, or find it awkward to do some parts of the housework. These things need not alarm



you, but if your mother is pregnant, she will really appreciate your help in doing your share around the house.

Some pregnant mothers feel nauseated, and have "morning sickness" for part of their pregnancy. This is uncomfortable, but usually not serious. The doctor may advise such a mother to rest in bed a while longer than usual in the morning before starting the day's work. In this case, the father and the older children can help her by getting their own breakfast and taking the mother's breakfast to her in bed.

A mother may like her children's help in some special preparations for the baby. Perhaps you can put a fresh coat of paint on the bassinet or the baby's crib. (Be sure to ask for paint that is harmless to babies.) Perhaps you can mend some favorite toys that you or your brothers or sisters enjoyed when you were babies.

Of course it is convenient to have a chest or a separate drawer in which to keep the baby's clothing. If the family is big and the house small, the furniture and the drawer space may have to be rearranged to make room for the baby's things. This is another way in which brothers and sisters can help prepare for the newcomer.

Perhaps a mother would like her children to help in getting together the equipment the baby will need. He will need bottles and nipples and something to sterilize them in, since he will take his boiled water and orange juice from a bottle at first, even if his mother nurses him. Many mothers are able to nurse their babies at the breast. The breasts of a mother who has just given birth give milk soon after the baby arrives, and in many cases there is enough to give the baby all he needs. If a mother cannot nurse her baby, the doctor pre-

scribes a formula for feeding the baby. After a mother stops nursing the baby, her breasts gradually stop giving milk. The baby is said to be weaned when he no longer nurses at the breast.

If a mother likes to plan ahead, she may begin some weeks before the baby's birth to get clothes and supplies ready for him. If it is not the first baby, she may have clothes, diapers and bedding for the crib left from the things of earlier babies. The baby needs only very simple things to wear—diapers, shirts, nightgowns, waterproof pants, sweaters, baby blankets, and some kind of wrap for cold weather. A mother may want some help from her family in finding these things and putting them in a convenient place for the baby.

Usually a mother packs her suitcase a few days or a week or so before she expects to go to the hospital. It is well to be prepared in case the baby comes earlier than expected. Probably a relative or friend will come to stay a few days to help out while the mother is in the hospital. This is a good chance for boys and girls of your age to be helpful.

After a few days in the hospital mother comes home—with the baby. This is a great day in the life of the family, as you know if your mother has ever gone to the hospital to have a baby. It is really a day to celebrate, and the father and children do all they can to welcome their mother and the new brother or sister.

CHAPTER 6

From Babyhood Into Childhood

If you have a new baby in your family, it will be fun to get acquainted with him. You will find that watching him develop is interesting. It helps you to understand how you, too, have grown up, and to look ahead to the growing up that is still before you.

Growing Bigger

When you think of growing, you probably think first of growth in size. A new baby is likely to double his weight in the first 4 or 5 months. If he weighs 7 pounds at birth, for example, he's likely to weigh about 14 pounds by 5 months of age. His most rapid gain comes in his first few months; then the rate of gain slows down. An average baby weighs about 20 pounds, a little more or less, when he is a year old.

But the rate of gain after birth is never as fast as in the last month before he was born. This is a good thing, for if he grew as fast in his entire first year as he did in the month before his birth, he would weigh about 160 pounds on his first birthday!

A baby that weighs around 20 pounds at one year of age is likely to gain about half that in his next year. The rate of gain gradually slows down still more. It is likely to take a one-year-old who weighs 20 pounds another 4 years to gain

his second 20 pounds, so that the weight is 40 pounds at 5 years of age. From then on, until the age of 10 or 12 or the early teens, the average boy or girl gains from 3 to 5 pounds a year, or a little more or less.

Although a newborn baby doubles his weight in a few months, he does not double his height for several years. A newborn baby whose height was 20 inches would not double that until the age of 4 years, when he would probably reach 40 inches, or about 3½ feet. Then for a few years, growth in height continues rather steadily, but a little slowly.

Just before or in the early teens, there then comes a spurt of rapid growth in both height and weight, which you will read about in the next chapter. This spurt of growth is part of the pattern of growth which affects you at your present age. To sum up, a baby passes through a period of fast growth in infancy. Then growth slows down, after which it goes faster again, just before or in the early teens. Then it slows down and stop about the end of the teens.

Perhaps you wonder how the baby grows in height. You remember that, before he is born, his skeleton at first is made of cartilage and that hard bone cells begin to replace the cartilage in the embryo's 7th week. Bone cells will keep on growing and replacing cartilage in various places in his skeleton until the individual is about 20 years old, when bone growth is finally completed.

Growth in height occurs when the long bones of the legs grow longer, and the bones of the head, neck and back grow bigger. The long bones are called by that name because of their shape. These are the bones of the ribs, arms, hands, legs and feet. They have a long, thin part in the center, called

the shaft, and a wider part at the end, called the head. There is a layer of cartilage between the shaft and the head. Gradually, hard bone cells replace the cartilage, but at the same time new cartilage is formed, so that the bone grows longer. It also grows thicker, and hard bony places form in the head. Finally, no more new cartilage grows, the bone stops growing in length, and the individual stops growing taller. This usually happens between the ages of 16 and the early twenties. At your age, you can still look forward to growing taller.

The baby changes his proportions, too, as he grows. When he is born, his head is about as wide as his shoulders, but how strange this would look in a young person your age! By the time the infant is a year old, his shoulders will be broader in proportion, and his body will have lengthened out so that his head doesn't look so large by comparison. But his head is still bigger in relation to the rest of his body than it will be as he grows older. The body proportions keep changing until the individual is almost grown. Noticeable changes in body form and proportion take place in boys and girls in the pre-teen and early teen years also.

You may wonder about the growth of the baby's sex organs. Babies are born with complete, but immature sex organs. During the childhood years, they grow rather slowly. Their noticeable development comes when boys and girls are your age, or a little older, just before or during the early or mid teens.

Growing Up in Behavior

Changes in the behavior of the baby and little child are

also interesting. Have you ever stopped to wonder how many separate things a little child learns to do before he goes to school? Probably you could not count them.

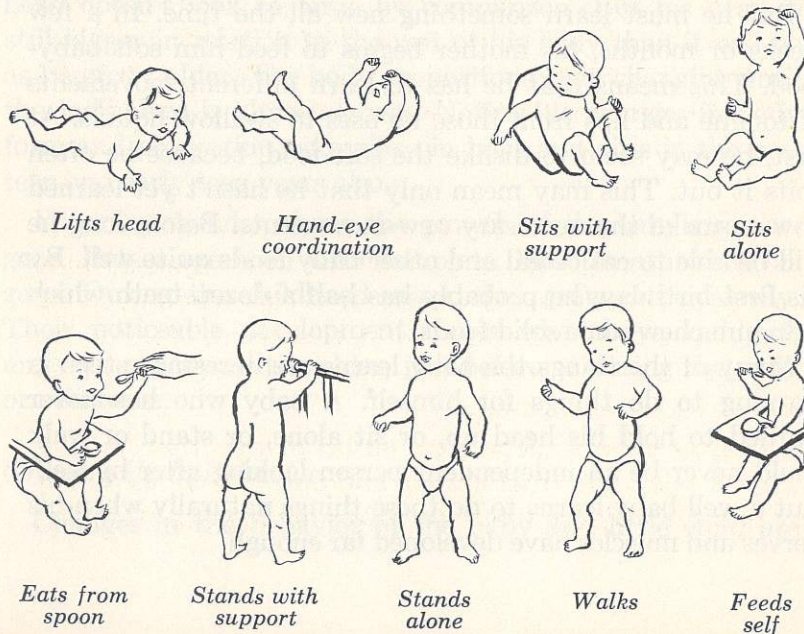
You have already read that even before the baby is born he can do some things. He can move his body, turn somersaults, swallow, and suck his thumb. He falls asleep and wakes up. He can move his eyes.

Just after his birth, he begins to breathe air in and out of his lungs, using oxygen from the air instead of from his mother's blood. And he must begin to take his food by mouth. Although he could suck his thumb before he was born, he may need a few days of practice before he learns to suck comfortably from his mother's breast or a bottle. Usually he has learned what he needs to know in a few days.

But he must learn something new all the time. In a few weeks or months, his mother begins to feed him soft baby-food. This means that he has to learn different movements of tongue and lips from those he uses to swallow liquids. At first, he may seem to dislike the soft food, because he often spits it out. This may mean only that he hasn't yet learned how to make the necessary new movements. Before long he will be able to eat cereal and other baby foods quite well. By his first birthday, he probably has half a dozen teeth which help him chew some solid foods.

Many of the things the baby learns are necessary steps in learning to do things for himself. A baby who has never learned to hold his head up, or sit alone, or stand or walk could never be an independent person looking after himself. But a well baby learns to do these things naturally when his nerves and muscles have developed far enough.

The steps by which a baby learns to use his hands make an interesting example of how a child learns by stages to help himself. The month-old baby waves his hands and arms around a great deal, but he can't govern where they go. By about 4 months, if you hold his rattle near him, he seems to reach for it with his head and shoulders as well as his arms, for it's difficult for him to move one part of his body without moving all of it. He reaches for his rattle with both arms, but his hands often travel past it. When he is 8 months old, and reaches for something, he can often grab it. And he's learning to pick things up between his thumb and his fingers. Have you ever thought how difficult it would be to pick things up without using your thumb? Then you know how it was for the baby before he learned to use his thumb.



At 1 year, the baby can do many things with his hands. He has learned to grasp things, and he can let go too, which he couldn't do smoothly at 8 months. The year-old baby can let go, for example, to drop his blocks into a box or to throw a ball a couple of feet or so. By the time he's 2, he may be able to hold his cup in one hand and drink from it while at 3 he feeds himself quite easily, and holds his cup and spoon in almost grown-up fashion. At 4, he can use his fork, spoon, cup and glass quite well and, at 5, many children are learning to use a knife in cutting their food.

In the next 2 or 3 years, eyes and hands develop so that they work still better together. By the age of 8, a child's eyes are usually well enough developed so that he can read and look at small things easily, and can use his eyes and hands in making some rather small, delicate things without strain. Boys and girls of 9 and 10 or a bit older are often skillful in making quite complex objects in arts or crafts or in using mechanical sets and making model airplanes and trains.

Growing in Independence

Learning to use one's hands and other parts of the body skillfully is just one small part of the way boys and girls grow up to be able to do things for themselves. Becoming self-reliant requires other kinds of development, too. For one thing, the little child must learn, bit by bit, to be able to do things apart from his parents.

A baby is often so dependent on his mother that he cries when she takes him from her lap and puts him in his crib or play pen. He may cry when she leaves the room. Eventually,

he learns to play by himself, and is willing to be separated from his mother. This may even be difficult for a kindergarten child on the first day of school, but eventually the youngster learns to be happy when he and his mother are apart. Step by step, the little child learns to do things on his own as he grows up enough. For example, a first-grade child can often go to school by himself if he doesn't live too far away, but no mother would allow her 3-year-old child to go half a dozen blocks away alone.

By now, you have become self-reliant in a great many things, but there are many ways in which you are still dependent on your parents, and this is as it should be. It will be quite a few years yet before you are fully independent and self-reliant, ready to live on your own. The steps by which you learn to do this sometimes cause disagreements between you and your parents in your pre-teen and teen-age years, but most young people and their parents eventually make the necessary adjustments.

Feelings Grow Up

An important part of the baby's education is the loving care which his parents and other members of the family give him. When a baby's family, especially his mother and father, love him dearly, it helps to make him the kind of person who can give love to other people in return. If a baby can grow up to be a friendly, loving kind of person, it will be easier later to become a good husband or wife, who makes a happy home for the children. Preparation for these responsibilities is an important part of a child's education. Perhaps it has

not occurred to you that education begins so early. But educating the baby's feelings and emotions starts when he is born. The way his family feels towards the baby teaches him to feel the same way towards other people.

A baby's love changes and develops as his other feelings and his mind and body do. A baby thrives when he receives love, and as he grows older, he becomes more able to give love. A child of 2 or 3 years often likes to give hugs and kisses to the people he loves, but his feelings are not very stable. If his mother does something he doesn't like, he may quickly feel angry instead of loving. Even the child of 6 or 7 may say to his mother or father, "I hate you!" when his love gives way to anger. It takes considerable more growing up for the child to let this love govern his behavior when he is angry or disappointed because of what the one he loves has done. Even boys and girls of your age, and adults too, may need to grow up more in this respect.

Growing Up in Friendships

The little child also develops in his ability to get along with other people, both in and out of the family. For example, when little 2-year-olds play together, it's as if they were just playing beside each other, each one doing what he wants, without paying much attention to, or helping, the other. They even grab each other's toys. By 3 years, they play together more cooperatively and, at 4, they are able to solve some disagreements by talking, instead of pushing and pulling each other about. A 5-year-old may be interested enough in other people to enjoy giving birthday or Christmas gifts

although, when he was younger, he was interested chiefly in getting them. As years go by, and a boy or girl matures, there develops a strong desire to give and to share good things with others. This is one way in which people can keep on developing even when they are adults. Boys and girls of your age are old enough to find greater satisfaction in giving to friends rather than in trying to get from them.

Growing Up Mentally

The little child's mind is growing and developing too. An exciting part of his mental development is learning to talk. A young baby coos and gurgles and later begins to jabber in a way that sounds like talking, although he says no words. Sometimes he "talks" to his doll in this jabbering way. Later on, he imitates sounds and loves to have his parents, brothers and sisters talk to him.

If you make simple double sounds, like "da da," "ma ma," or "bye bye" he'll often repeat them after you. At first he doesn't know that "mama" is the name for his mother, or that "da da" is like daddy, a name for his father. But by the end of the first year, some babies do use 1 or 2 words in a way that can be understood both by family and other people. When the baby gets across ideas to others by using these words, he's really begun to talk.

Most children learn to speak between 1 and 2 years of age and by 2 years can use 200 to 300 words. The 2-year-old can combine 2, 3 or 4 words to make simple sentences. By 3 years, he knows a great many words and is asking many questions. What does the fireman do? What makes it thunder? Why

does it rain? Where do babies come from? By 5 years, the youngster knows about 2,000 words, and is learning something new every day as he asks questions, questions, questions. Of course, by now you not only have a still bigger vocabulary, but you are reading and writing a great deal.

Changing Interests and Feelings About Sex

Many questions of a little child may be about babies. At 3, he may ask his mother to get one for him, as though he were asking for a toy. He wants to know where you get babies. Even if his mother tells him that the baby grows inside his mother, he may not understand. If he has heard about a mother coming home from the hospital with a baby, he may assume that the hospital is the place to get babies, or he may think they come from a store. As he grows older, he repeats his questions about babies, and he begins to understand the true story, little by little.

All this interest in babies may be a different thing from what actually happens when a baby arrives in a family. Very often, a child under 5 expects that having a new baby in the house will be like having a new toy. Then, when he sees all the attention his mother and father must give the new baby, he becomes quite jealous, even when the parents give extra attention to him so that he won't feel left out. It's not easy for him to understand that his parents do love him just as much after a new baby arrives. Boys and girls of your age know that parents have enough love to go around for all their children, but there still may be some twinges of jealousy.

Little children in the pre-school years are curious not only about babies, but about their own bodies, and the bodies of other children. Sometimes they play "doctor" or "hospital," and take their clothes off because of this curiosity. But, as you are old enough to know, people in our civilization customarily wear clothes in public. Little pre-school children still have to learn that it is against custom for them to remove their clothes except in the privacy of their home; this is one of the things their mothers try to teach them. Such curiosity often comes up when the little child has no brothers or sisters and has not had a chance, in the privacy of the family, to see what other children's bodies are like.

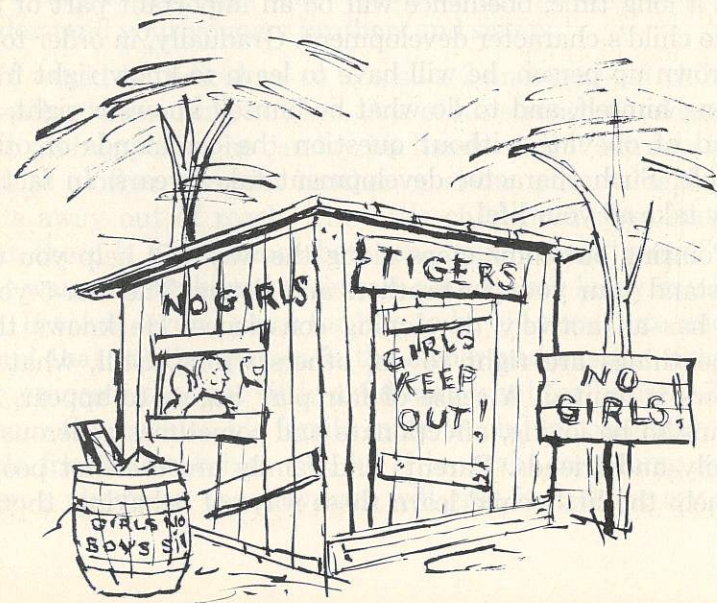
By now you probably realize that customs about clothing and modesty differ with the time and the place. People wear a different kind of clothing to church, to a dance, or to a wedding. On the beach, or in the swimming pool, people wear much less clothing than in the street or at school. In some swimming pools for men and boys only, no suits are worn, while in others, the custom is to wear swimming trunks. Different homes have different customs, too. In some homes, members of the family feel it is all right to undress before other members of the family. In other homes this is not done.

A baby or a little child does not feel that showing his body is either modest or immodest. But older boys and girls develop a sense of modesty about their bodies. They begin to respect the customs of their own home and community and the feelings of other people about the proper clothing. A feeling of modesty does not suggest that there is anything to be ashamed of in one's body.

Another way in which boys and girls develop is in their

feelings toward the opposite sex. Pre-school children play equally with both sexes, without seeming to prefer one sex to the other. At 6 or 7 years, boys and girls still play together, but they seem to be developing different interests in their play. Girls like to play house, while the boys like to play cowboys and Indians, or cops and robbers. In their dramatic games, usually the girls take the women's parts, and the boys take the men's parts.

At about 8 years of age, many children begin to change. Then boys often begin to want to play chiefly with boys, and girls to prefer girls. At 8 or 9, many boys like to join a small gang which excludes girls from its activities. It is common for a few girls to make up a club and decide to have nothing to do with boys. These attitudes are likely to continue for several years, into the age group in which you now are.



Conscience Grows Up Too

Another way in which children grow up is in the development of a conscience. They learn to know right from wrong and are inclined to do what is right. At first they obey their parents' authority, then later the authority of the school, or the church, or the law of the community. It takes a long time to learn to obey a moral law because it is right, not merely because someone tells you to do so.

Perhaps the baby begins to learn to obey when he first understands what his mother means when she says "No! No!" very firmly. Understanding his mother's "no" is necessary, because she uses it as a command to keep the little child from getting into trouble. Through understanding her "no," the baby begins to learn to do what his mother tells him. For a long time, obedience will be an important part of the little child's character development. Gradually, in order to be a grown up person, he will have to learn to know right from wrong himself, and to do what he himself knows is right, instead of obeying without question the commands of other people. Such character development takes years. In fact, it may take all your life!

Pointing out some steps along the way will help you understand your younger brothers and sisters. The 4-or-5-year-old has an actively developing conscience. He knows that some things are right to do, others wrong. Still, what he knows is limited. A sense of fair play begins to appear. He begins to be loving, affectionate and sometimes generous to family and friends. Parents and family are the first people to help the little child learn these ways of behaving, though

4-and-5-year-olds go to Church School where they also learn more about loving, giving and telling right from wrong.

Even at 5, a child may be too young always to know the difference between truth and imagination, but he has a better idea than he did at 3 or 4. Then he was likely to tell all kinds of stories just as if they were true. He still exaggerates at 5, but he usually knows when he is trying to fool you. However, one can't expect a 5-year-old to know what the truth is as well as a 10-or-12-year-old.

Admitting it and telling the truth when he has done something wrong is often too much to ask of a 5-year-old. He will have to be a few years older before he can be counted on to take the blame if he has damaged an older brother's or sister's toy or broken his mother's choice dish. Admitting blame isn't easy at any age, and remembering this may help you understand your younger brothers and sisters.

It would be ridiculous to accuse a 2-or-3-year-old child of "stealing" something he likes. One of his strongest tendencies is to grab anything he can lay his hands on if it attracts him. A wise mother, or older brother or sister, puts valuable objects away out of reach. The little child hasn't yet learned that there is a difference between "mine" and "yours." He just wants everything for himself, and doesn't know any better. It takes several years for him to be old enough to understand that another person is the owner and has the right to the property that the little child may want for himself. This is something which his family must teach him patiently. His little friends teach him too, for if he grabs something away from a playmate, the playmate will grab it back, or cry and

make a fuss. So the difference between "mine" and "yours" gradually becomes clear.

It also takes time to learn to obey the rules of the game and not to cheat. If you're playing a game with a 6-year-old, he may want to win so much that he even tries to cheat. Perhaps he wants to change the rules so that he can win. At the same time, he gets angry if anyone else in the game cheats. But by the time he's 8 or 9, he usually plays according to the rules. He's learned more about how to play the game, and is beginning to learn that it's fun to play even if you don't win.

By age 8, boys and girls are beginning to enjoy organized games. They try to learn the rules, and often even make up new rules. They begin to realize that rules are really important. Learning to obey the rules in games helps children of this age to appreciate the value of fair play and such things as taking turns. Learning to follow the rules and to be fair to other people is still another way in which boys and girls grow up.

These are only a few of the ways in which the little child grows up physically and forms his character and personality as he grows older. If you have younger brothers or sisters, you may observe other kinds of development.

You still have some years of growth and development ahead of you. Some of the phases through which boys and girls pass at your age will be discussed in the next chapter.

CHAPTER 7

Growing Up in the Pre-Teens



For some pre-teen boys and girls, life seems to go on at 9, 10, or 11 years without any dramatic changes. They grow larger, study more difficult subjects at school, and are more skillful at games, or music, or art. But many girls and some boys begin to go through changes in physical growth and in sexual development while they are still in their pre-teen years.

For the early part of the pre-teen years, boys and girls continue to be rather separate in their interests. Boys keep on teasing girls, and the girls tease back. Girls have girls for their best friends, and many girls join a girls' organization, such as the Girl Scouts. Boys have boys for their best friends, and like to be with groups of boys, such as the Boy Scouts. At the end of the pre-teens some girls become interested in boys, but the change in boys when they become interested in girls usually comes later on, in the teens.

Boys and girls begin also to change a little in their feelings about their parents. They want to grow up and leave childhood, but at the same time they depend very much on the love, support and guidance their parents give them. They want to be more independent and responsible, but at the same time they do not have enough experience to make all the decisions they want to make. As a result, they sometimes clash with their parents and complain that parents don't

understand them. Pre-teen boys and girls are also beginning to understand more clearly the differences between right and wrong, and to develop their own convictions about what is right. In other words, in these years boys and girls are getting ready to be teen-agers. They are growing up.

The changes described here happen to all boys and girls, but to some earlier than to others. Most girls will go through these changes around 12 or 13, but the changes come later for most boys, perhaps not until they are 14 or so. Naturally all boys and girls of pre-teen years want to know what changes to expect as they grow up, whether the changes have already begun or are still ahead of them.

The kinds of change that will be discussed in this chapter are part of pre-adolescence or early adolescence. Adolescence is the period of years in which boys and girls change into young men and women, a period which roughly covers the teens. The pre-teen or very early teen-age years are sometimes called pre-adolescence.

Changes in Body Size and Form

Changes in height are part of your pre-adolescent growth in these years. Changes in your rate of growth begin when glands become more active. One of them, the pituitary gland, as was mentioned on page 36, makes several different chemicals called hormones. (A hormone is a chemical substance that is made in one part of the body and is carried in the blood to another organ or part of the body, where it stimulates some activity.)

One of the hormones of the pituitary gland governs the

way a boy or girl grows in height. The pituitary gland begins to make increased amounts of this hormone at some time during the pre-teen or early teen years, so that the individual begins to grow more rapidly in height.

In general, girls begin this spurt of growth in height between the ages of 9 and 12, but it may be a little earlier, or even as late as 14 years. Many grow fastest when they are 11 or 12. Then the rate of growth slows down again. Many girls have reached nearly their full height at 14.

The spurt of growth in height takes place in boys between the ages of 11 and 16. For the average boy, it is a year or two later than for the average girl. Only about one-fourth of the boys in a group have started their spurt of growth by age 11, and most of them grow fastest in height at about 13 to 15, slowing down by age 16.

The spurt in height may last 2 or 3 years for some boys and girls or only about a year for others. The average child grows 6 to 8 inches during the years of rapid growth in height.

As you can see, children differ a great deal in the age of fast growing. There are early, average and late growers among both boys and girls. It is just as healthful to have your spurt of growth early or late as it is to have it at the average time. However, it may be upsetting at times to find that your friend, who has always been about your size, is shooting up ahead of you, and changing in other ways, too, so that you feel rather strange with each other. Perhaps you are the one who is shooting up ahead of your classmates, and you feel conspicuous because suddenly you are much taller than most of them. And a boy who has been used to being

about the same height as certain girls in his class finds that they are taller than he, and that they act more grown-up socially.

Boys and girls at your age need to know that in a few years, all their friends will have gone through their spurt of rapid growth, and will settle down to about their adult height. Some of the extreme differences of pre-teen years will even out a bit. Boys will catch up with girls in height and development. In the end the average boy is taller and heavier than the average girl.

But your growth-spurt won't turn a naturally short boy or girl into a tall person, for heredity has a great deal to do with the height you finally reach. In general, the tall child becomes a tall adult, the average child average, and the short child a short man or woman.

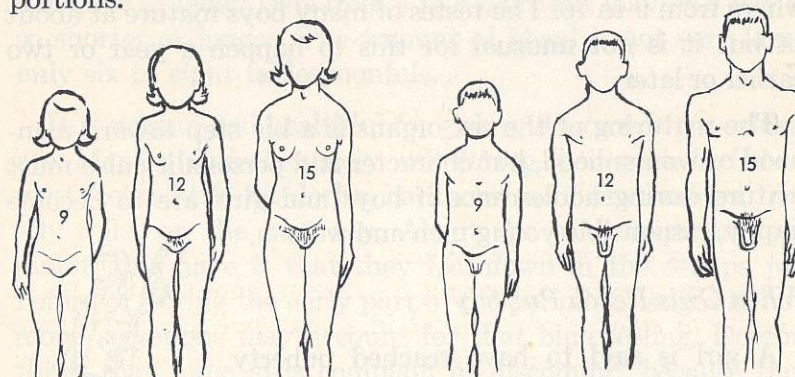
The spurt of growth in height is usually followed by a rather big increase in weight. Girls sometimes gain 8 to 12 pounds, or even as much as 20, in a year, but the yearly gain usually drops to 5 or 6 pounds by the middle teens. If you are a girl of this age, and gaining weight rapidly, don't worry about overweight unless your doctor advises you to reduce. He may say that your weight-increase at this time is part of your natural pattern of growth.

As a girl gains weight, the form of her body also changes. Her hips become broader and more rounded. Her breasts also become fuller, and she wants a bra. Hair grows under her arms, and across the lower part of the abdomen. Her voice becomes fuller and richer.

The changes in body form are attractive and useful. The widening of a girl's hips gives more room for the growth of a

baby, and the development of her breasts is a step towards preparing her to nurse her babies.

Boys also go through a period when they gain weight, and when their body proportions change, but it comes later than for girls. Shoulders grow broader. When arms and legs are growing fast in the early teens, the trunk is not yet lengthening much, so the boy looks long-armed and short-waisted. Afterwards, his trunk lengthens and he gains his adult proportions.



Boys usually have their big gain in weight around 14 or 15 years. Many boys gain as much as 12 to 15 or 20 pounds in a year, but the yearly gain is cut in half in a year or two. During the months when they are gaining most, some boys worry because they look plump, with fullness around the breasts. Now and then such a boy even refuses to go swimming because he is ashamed of what he thinks is a girlish look. This fullness usually lasts only a few months. It has nothing to do with whether a boy is a really masculine boy. The chubby look will pass as he reaches his more mature body form.

Reaching Puberty

Puberty is the time of life when sex organs mature and produce mature sex cells. It is the beginning of adolescence. Changes start when a hormone of the pituitary gland causes the sex glands to produce sex hormones. In girls, the ovaries then begin to discharge mature egg cells. In boys, the testes begin to produce mature sperm cells. In most girls, the ovaries mature at about 12 or 13 years, but it may happen anywhere from 9 to 16. The testes of many boys mature at about 14 but it is not unusual for this to happen a year or two earlier or later.

The maturing of the sex organs is a big step toward manhood or womanhood, but character and personality also must mature during adolescence if boys and girls are to become happy, responsible young men and women.

When Girls Reach Puberty

A girl is said to have reached puberty when she has begun to menstruate, which usually happens when she is about 12 or 13 years. But some girls start as early as 9 or 10, and others not until 14 or 15. You may want to review part of Chapter 5, giving the story of menstruation.

It is interesting to know that the first menstruation usually occurs about 2½ to 3½ years after a girl has begun her spurt of rapid growth in height, and also after rapid gain in weight has begun.



Probably you have some questions about menstruation. For one thing, how long is it from one monthly period to the next? This varies from girl to girl, but it is usually somewhere between 26 and 32 days from the first day of one period to the first day of the next. When a girl first begins to menstruate, the number of days between periods is not always the same. As she grows older, it usually occurs more regularly, and she has a pretty good idea when to expect it. The flow of blood lasts from 4 to 6 days but may be a day or so shorter or longer. The amount of blood is not very large, only six to eight tablespoonfuls.

It is normal and healthful for girls and women to menstruate. Many girls feel entirely well during their periods. Others may feel a little headache, backache, or a few cramps, usually mild, on the first day. About the most common complaint girls have is that they feel down in the dumps just before or during the early part of the period. Changes in hormone secretions may account for that blue feeling. Doctors think that some girls complain of discomfort because they expect to be uncomfortable. In primitive times, before people knew what menstruation was, many superstitions grew up about it. Some of these ideas linger and make people think of menstruation as an illness. The fact is that it is a normal occurrence which is part of the process of keeping the uterus ready to receive and nourish a fertilized egg cell so that it can grow into a baby. The occasional girl who has severe pain should see her doctor.

Most girls feel better if they carry on their usual activities during menstruation. A daily sponge bath or warm shower

helps a girl feel clean and fresh and prevents unpleasant odors. Most girls can safely enjoy swimming, tennis, bicycle riding, hiking, and other normal pre-teen activities, provided they are done with moderation. It is not advisable to swim in very cold water, however.

To protect their clothing, girls can buy sanitary napkins or pads, which can be attached to a sanitary belt, and worn to absorb the flow of blood. The napkins are made of absorbent material, and can be changed and discarded as often as necessary for comfort. They can be bought in various sizes and thicknesses to suit a girl's needs.

Tampons are also used for protection during menstruation. A tampon is a small, tight roll of absorbent material that can be inserted in the vagina and worn without a sanitary belt. It should be changed at least as often as a sanitary napkin. If the flow is heavy, a sanitary napkin is needed with it. A doctor can advise mother and daughter whether the daughter should not use a tampon for any reason, such as a condition in which a tampon would cause irritation.

Theoretically, a girl could have a baby as soon as her ovaries have begun to discharge mature egg cells, and some do have babies at 12 or 13. Fortunately, most girls do not marry and become mothers until their late teens or early twenties. A girl needs to know much more than she has learned in her early teens before she is ready to become a mother. She needs to learn a great deal about the world, herself and other people, about being a wife, making a home, and caring for children, before she is ready to be a mother.

When Boys Reach Puberty

Since the sex organs of most boys do not mature until around the age of 14, only a few pre-teen boys will have become sexually mature. Just the same, pre-teen boys want to know, and should know, what it means to reach puberty.



In the years just before puberty, what are known as the secondary sex characteristics begin to develop. When a boy is about 11 or 12, his penis and testicles begin to grow larger. Hair begins to grow on the lower part of his abdomen, under his arms, and perhaps on his chest. Later, hair grows on his face, and he begins to wonder whether he needs a razor of his own. His voice begins to change and deepen, usually at about 14 or 15. These changes take several years.

A boy must mature in his intellect, character and personality before he becomes a mature man, but we cannot usually set an exact date when a boy becomes a man in these respects. But there is an event that marks the time when a boy becomes sexually mature. A boy is said to have reached puberty and to be sexually mature when he experiences his first ejaculation of semen. As you read in Chapter 3, semen is the whitish fluid in which sperm cells leave the body. When there is an ejaculation, the penis becomes erect and firm, then muscles contract so that the semen is discharged from the penis through the urethra. Ejaculation is accompanied by intensely pleasurable sensations.

Many boys have their first ejaculation at about 14 years,

though it occurs a year or two earlier in some or later in others. A boy does not have an ejaculation until his sex glands have matured, although he can have an erection even in infancy.

When a boy has matured sexually, he may experience erection and ejaculation in various situations. Sometimes the cause is merely physical, as when his bladder is full. Sometimes it is mental, as when he reads an exciting book or watches a movie about love-making, or when he is much attracted to a girl, or is day-dreaming about sex.

Sometimes a boy may wake in the morning to find that he has had an ejaculation during the night. Such ejaculations are called seminal emissions, or nocturnal emissions, or wet dreams. It is an entirely normal experience for an ejaculation to take place during a boy's sleep, although some boys do not have nocturnal emissions.

When a boy becomes sexually mature, he is physically able to become a father. In our civilization, however, he needs to develop in many other ways before he should take on the responsibilities of fatherhood. He needs to complete his education, learn how to make a living and become a mature person who can maintain a home, support a wife and family, and do his part as a good citizen.

Maturing sexually is an extremely important and interesting part of growing up, though it is not the whole of becoming an adult. Sexual attraction between men and women is a big part of the love that leads a man and woman to marry, and have children and care for them with tender devotion. It is a part of life which boys and girls should respect and understand as they are becoming mature.

A Bothersome Question

Of course growing up is not without its bothersome questions and problems. One of those which causes anxiety in boys and girls is the question of masturbation. Masturbation means handling one's own sex organs so as to arouse an intense sexual sensation which, in boys who are sexually mature, may result in an ejaculation. This self-stimulation is very common among both boys and girls, but especially among boys.

Boys and girls may have heard that masturbation causes illness, or pimples, or insanity, or a boy may fear that it will use up all his semen so that he cannot become a father when he is grown. For centuries such beliefs were accepted, but physicians today assure us that none of these things is true. Perhaps the greatest harm is the guilt and fear that young people feel if they masturbate. Doctors point out that most young people wish to control this practice and leave it behind them as they grow older and become more mature people whose lives are filled with friendships, interesting activities, and worthwhile purposes.

It is possible that excessive masturbation is a warning that the boy or girl takes so much satisfaction in his own body that he doesn't develop friendships easily, especially with the other sex. Such a young person should talk with one of his parents or with some older person whom he trusts, to find out how he can make more friends and develop more constructive interests in life.

Seeking Answers to Your Questions About Sex

Pre-teen boys and girls naturally are curious about what happens when they mature sexually, and of course they want to understand the changes in themselves. Books like this one can answer many of your questions, but even after you have read a book or two you'll have questions. It is a good idea to go to your parents with them instead of talking about sex with boys or girls your age. They probably do not know any more than you do. Other young people are likely to repeat things about sex which are not true at all, just because they do not know any better. When you have questions, ask those who know, such as your parents, a doctor, a minister or a teacher whom you respect.

Sometimes young people feel ashamed to ask their parents questions about sex, but there is no good reason to feel that way. Perhaps a boy or girl may have seen toilet scrawls and scribbles or heard vulgar talk about sex, and this may have given him the idea that sex is shameful. Young people who make indecent drawings and use vulgar language about sex just simply do not understand the truth about it. Probably you will want to ask your questions when you can talk privately with your parents, but that is because you can talk more freely when you are alone with them, not because you are ashamed to ask your questions.

Without sex we would not have our parents or their love, or the joy of having babies in the home, or the happiness of men and women who love each other from youth to old age. We would not have poems or stories about love, either. Sexual attraction between men and women accounts for the fact

that the human race keeps on living. These things are too important and too thrilling to allow ourselves to be ashamed, of them, or to speak of sex in a cheap way.

After you have read this book, you may want to look through it again to remind yourself of the scientific names connected with reproduction and sex. If you know them, it is easier to ask your questions of your parents. And it is part of growing up to be able to use the correct words about your bodily development.

*Changing Feelings**Feelings About Your Parents*

In your pre-teen years, it is natural for your feelings about your parents to change in some ways. By now, you have passed the stage of childhood when your love, like the baby's, was chiefly a matter of taking. You have begun to enjoy giving. You are happy when you can do something for your mother or father, especially if you do it as a surprise. You give much thought to your presents for them. Learning to share your possessions and to do things for them is a long step forward from the way a baby loves.

As you grow older, and become less dependent on your parents, your love will have still more of giving in it, and still less of demanding that they give to you. When you are adults, the love between you and your parents becomes more like the love of equals, each giving to the other and receiving from the other.

It may seem strange that as your love for your parents grows and develops in your pre-teen years, at the same time you become more independent of them, more able to be separated from them and to have different opinions. But that is what happens. You are able to do more things for yourself. You spend less time with your family and more at school and with your friends. You and your friends make many plans by

yourselves, about your games and sports, excursions, and various out-of-school activities. You make rules for your games and contests, and take responsibility for carrying them out. You are learning to make independent decisions without having to be told by adults exactly what to do.

Learning to make wise use of independence is a big job for young people in the pre-teens and teens. Gradually, you learn through experience to make wise choices. Sometimes your decisions are mistaken, and then you wish you had consulted your parents first. When in doubt, it's certainly a good thing to do so. Your eventual aim is to learn to choose what is right and wise because you want to do the right thing yourself, not just because someone has told you what to do. But it takes many years to learn to do this, and in your pre-teen years you need your parents' guidance more often than not, even when you would like your own way.

At your age, the good opinion of your crowd sometimes seems more important than the opinions of your parents. You want your friends to like the way you dress, act and speak. You want to do the same things that your friends do. This also is part of becoming an independent person who does not have to rely entirely on parental opinions.

Often it's all right to go along with your friend's ideas, but it can be carried too far. What do you do when your friends want you to join them in doing something you know is wrong? You can take a step toward real independence if you quietly go ahead and do what you



know is the right thing. Your friends will respect you for it in the end.

Changing Feelings About Brothers and Sisters

Growing up with brothers and sisters is always interesting, but it's too much to expect that things should always go smoothly. Even though they love each other deeply, there may be a number of reasons why they disagree.

One reason may be that traces of jealousy remain from the time when a boy or girl was quite young and a new baby arrived in the family. As we've pointed out, a new baby requires so much care that it is difficult for mother and father to avoid giving less attention to the older children. Little children, especially of pre-school age, are often jealous of a new baby, for they think he is taking their parents' love away from them. They are too young to realize that parents love them as much as ever.

Some of these children form the habit of being jealous while they are young, and it colors their feelings about a young brother or sister even as they grow older. Each still resents it when the other is the center of attention. Fortunately, most boys and girls learn to be genuinely interested in other people as they grow older, and they learn to be glad when a brother or sister does receive favorable attention. But this takes time, and even a pre-teen boy or girl may have to work at controlling his jealousy. It happens also that a child may be jealous of a brother or sister who has talents he does not have, perhaps as an artist, musician, athlete, or student. Such jealousy is not surprising because many people praise

the talented one and pay less attention to the other children. Yet many boys and girls learn to overcome their jealous feelings as they pass through their pre-teen or teen-age years. Perhaps they do it by becoming expert at something quite different from their brother's or sister's accomplishments, so that they are happy in cultivating their own special abilities.

Many young people do succeed in learning to be really happy and proud of a brother's or sister's successes. Learning to enjoy someone else's happiness and success requires a great degree of maturity, and takes time and effort, but you can do it, step by step. The Golden Rule, old as it is, is still a very good modern guide to harmony in relationships between brothers and sisters: "Do unto others as you would have them do unto you."

Feelings About Friends of the Other Sex

In pre-teen years, boys and girls are likely to have rather different interests. Boys enjoy rough-housing around, and like vigorous, active games. Some girls enjoy them too, but many prefer quieter games. Most boys continue to prefer playing with boys, as they did when they were a bit younger. Many girls still prefer the company of girls.

Some girls who mature early begin to be interested in boys at the end of the pre-teens, but many girls are uninterested in them until the middle or late teens. If two girls are best friends, and one matures early and becomes interested in boys while the other still thinks boys are a nuisance, the difference may interrupt their friendship. The girl who is later in maturing can't understand why her friend has

changed, and the girl who is maturing early begins to go with girls whose interests are like hers.

A girl who matures early and becomes interested in boys at 12 or 13 may find that the boys of her age are not interested in girls. She may be older in development than most of the boys in her class, whose only interest in girls is to tease and make fun of them. The girl may think that the boys don't like her, and that there is something wrong with her, but the truth is that the boys are later than she in developing, and just don't care about girls yet. By the middle or late teens, many of the differences in maturity between boys and girls will have disappeared, and the boys of her age will be interested in girls.

Actually, it is a good thing that boys in the pre-teens go through a few years when they prefer to be with boys, and that girls for a time prefer girls as friends. These years are really the years of late childhood. At this time, boys gain more confidence in being masculine if they associate chiefly with boys and do things boys like to do. Girls gain confidence in being feminine through associating with girls and cultivating interests that appeal to girls. When the time comes for dating, the boy and the girl have each gained self-confidence. They feel more sure of themselves, and that makes it easier for them to get along, both with friends of their own sex and friends of the opposite sex.

A Look Ahead

Pre-teen boys and girls for the most part have not begun to have dates, but some of the older pre-teens are interested

in taking a look ahead and in having some of their questions about dating answered.

What is the best age for beginning to have dates? The experts don't fix it by your age in years. They say that the time to begin solo dating comes when you have learned to feel self-confident and comfortable with the other sex. This time is not likely to come until 15 or 16 years of age for girls, and a bit later for boys. There may be several stages in dating before you are able to enjoy solo dating. Sometimes the first step is to start out by being friendly with the other sex when you meet in classes or in school clubs or activities where boys and girls do things together. Then you may feel that you have the courage to ask a group of boys and girls to your house for some informal, friendly gathering, possibly to listen to some new records. Perhaps your parents will approve if a group of boys and girls goes on a hike or a picnic.



After some group-dating of this sort, 2 or 3 boys and 2 or 3 girls may go to a movie together. Then after you have tried this kind of dating for a while, you and your parents may feel that you can get along comfortably in solo dating. It may take a few months or it may take a year or two for a boy or girl to go through such steps as these and to feel quite at ease with a date.

Unfortunately, there are some communities today where it is becoming the custom to imitate the social life of older teen-agers and young adults in parties and social gatherings for pre-teen boys and girls. Girls of 9, 10, or 11 dress like young women, with high heels and elaborate hair-dos. Parents arrange dates for children as young as 8 or 9. The parties specialize in kissing games, dancing, and other grown-up entertainments.

These boys and girls are being cheated of a valuable and interesting part of their childhood by being encouraged to act like older teen-agers. They are losing out on a great deal of fun that comes when they just act like boys and girls of their own age. They are trying to jump over their childhood years into adolescence. But this is not really possible, any more than it is possible for a baby to walk alone before he can stand. The fact is that pre-teen boys and girls don't really have a good time when they are forced to act older than they are. Actually, dating for pre-teen boys and girls is usually very unsatisfactory to them.

Naturally this doesn't mean that a pre-teen boy and girl shouldn't be friendly if they wish to be. It does mean that they shouldn't try to imitate the social activities of older

teen-agers and young adults. In some communities, the parents, teachers and boys and girls have agreed that school parties for the 6th grade or younger will be all-boy or all-girl events, or if they are mixed, boys and girls do not go in couples. They have also agreed the parties end by 9 P.M. But you don't have to wait for community agreement. With your parents' help, you can give your own parties of a kind that you can really enjoy during your pre-teens.

Naturally, you're looking ahead to the teens and hoping you'll enjoy them. They can be wonderful years as you go ahead with your education, settle on a vocation, and become expert in sports, in the arts, or in various hobbies. You'll enjoy broadening your friendships and learning more about the complex world we live in. In the meantime, you can have a happy time being your own age.

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